

# Mining dump truck BELAZ-75710 with payload capacity of 450 metric tons (496 short tons)

Designed for transportation of rocks and other loose materials at open cast mining sites on technological roads under various climatic operating conditions.



## Engine and its systems

Model	MTU DD 16V4000
Two diesel, four-cycle engines with V-type cylinders arrangement, DDEC electric control system, direct fuel injection Common rail, gas turbine charging and intermediate cooling of the charged air.	
Overall rated power	
@ 1900 rpm, kW	2x1715
Number of cylinders	16
Overall cylinders displacement, l	2x65
Cylinder diameter, mm	165
Piston stroke, mm	190
Maximum torque	
@ 1500 rpm, Nm	9313
Overall specific fuel consumption, g/kW hr	2x198
Air cleaning is performed by three-stage filters with dry-type elements. Exhaust gases evacuation is being made through body structure and mufflers.	
Lubrication system is of forced circulation type under pressure with "wet" crankcase design.	
Cooling system is of double-circuit fluid type with forced circulation. Oil cooling - through water-to-oil heat exchanger.	
Starting preheating system is of fluid type.	
Starting system features pneumatic starter.	
Cooling system impeller drive – hydraulic clutch with automatic control.	
Switching on and off is carried out by thermostat.	
Starting system air pressure, MPa	0,6 - 0,8
Electric system voltage, V	24

## Transmission

Transmission is of electromechanical type. AC electric drive Siemens MMT500 with two traction alternators, four traction electric motors and motor-wheel reduction gears, auxiliary electric machines, adjustment and control devices.	
Traction alternator	YJ177A
Power, kW	1704
Traction electric motor	1TB3026-0GB03
Power, kW	1200
Control cabinet	MMT500 Drive System
Double-row motor-wheel reduction gear is of planetary type.	
Ratio	29,2
Max speed, km/h	60

## Steering

Meets the requirements of ISO 5010.	
Hydrostatic with fluid amplifier driven by variable-flow pump.	
Emergency drive: pneumohydraulic accumulators.	
Turning radius, m	19,8
Overall turning diameter, m	45
System pressure, MPa	16,5

## Suspension

Conventional suspension for front and rear wheels. Cylinders are pneumohydraulic (nitrogen and oil). Two cylinders both on the front axle and on the rear axle. To provide lateral stability antiroll bars are mounted on each driving axle.	
Cylinder piston stroke, mm	
- front	170
- rear	170

## Hydraulic system

Combined hydraulic system for body hoist, steering and brake system.	
Oil pump - axial-piston variable-flow pump with pressure regulator.	
Mechanical drive through propeller shaft from output flange of traction alternator.	
<b>Body hoist</b>	
Body hoist cylinders are telescopic with two stages and one stage of double action.	
Laden body raising time, s	26
Body lowering time, s	20
System pressure, MPa	26

## Wheels

Pneumatic tubeless radial tires with quarry tread pattern.	
Designation	59/80R63
Internal pressure, MPa	according to manufacturer recommendations
Rim designation	44.00-63/5,0

## Body

Bucket type body is a welded structure with FOPS safety system in accordance with ISO 3449, has a protective canopy and is heated by engine exhaust gases. It is equipped with a device for mechanical locking in raised position and with rock-ejectors.

Body capacity in accordance with ISO 6483, m<sup>3</sup>:

struck	heaped 2:1
157,5	269,5



## Frame

Frame is a welded structure of high-strength low-alloyed steel. Longitudinal box-section constant height side rails are interconnected by cross-members.

## Brakes

Braking system meets international requirements according to ISO 3450 and comprises service, parking, auxiliary brakes and retardation system.

Service brake: Front and rear wheels – double-disk brakes with one brake gear per disk and automatic clearance adjustment. The disks are mounted on the shafts of traction electric motors.

Separate hydraulic drive for front and rear wheels.

Parking brake – constantly closed system with two brake gears on outer brake disk of traction electric motors. Spring actuation, hydraulic control. Auxiliary brake – parking brake, intact circuit of service brake and retarder are used.

Retardation system – electrodynamic braking with traction electric motors in alternator mode with forced air cooling of brake resistors.

Brake resistors	MMT500 Gridbox
Power, kW	4800

## Cab

Two-seated cab with ROPS safety system in accordance with ISO 3471 and adjustable operator's seat. Cab meets all standard requirements for internal sound levels, vibration, concentration of poisonous substances and dust.

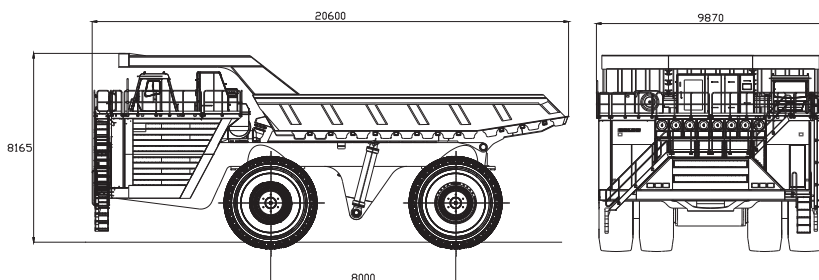
Noise level inside the cab is not more than 80 dB(A).

Local vibration level is not more than 126 dB(A). Overall vibration level is not more than 115 dB(A).

## Special equipment

- Starting preheater
- Fire-fighting system with automatic control
- Automatic centralized lubrication system
- Loading and fuel control system
- Telemetering tire inflation control system
- Diagnostics system
- High-voltage line proximity alarm
- Video surveillance system
- Heater and conditioner unit
- Fettling of the body (option)
- Wiggins fast-fill fueling system (option)

## Overall dimensions, mm\*



\*Overall dimensions are specified for basic kitting-up of the dump truck

## Weight

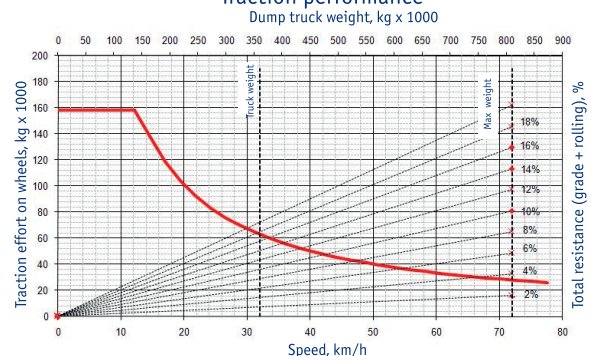
Payload capacity, kg	450000	
Operational weight, kg	360000	
Gross weight, kg	810000	
Weight distribution on axles, %:		
	unladen	loaded
- front	60	50
- rear	40	50

## Refill capacities, l

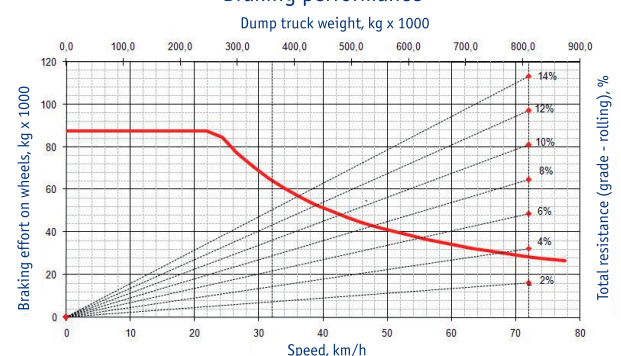
Fuel tank	2x2800
Engine cooling system	890
Engine lubrication system	2x269
Hydraulic system	1800
Motor-wheel reduction gears	600 (150x4)
Suspension cylinders:	
- front	125,8 (62,9x2)
- rear	125,8 (62,9x2)

## Traction and Braking performance

### Traction performance



### Braking performance



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